



Notes for TB & Immunization gathered from all groups

هذه الملخصات عبارة عن اجتهاد شخصي لمجموعة من طلاب الطب البشري/عدن معتمدين على ماتم مراجعته او قراته وقد تفيد البعض منكم وللعلم ليس لها اي علاقة مباشرة باي عضو من اعضاء الهيئة التعليمية في الكلية. زملائنا الاعزاء ان اصبنا فمن الله وان اخطانا فمن انفسنا ومن الشيطان، نبقي بشرا نصيب ونخطئ لذا يرجى الاشعار في حالة وجود اي ملاحظات عن طريق جروبنا في الفيس بوك او عبر ايميل الجروب

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TB

- Tb is considered a the most infectious disease that causes death, every year 25-50 cases out of 100,000 inhabitant/year of TB half of them are pulmonary TB, this incidence increases in Aden but decrease in Hadramout, Shabwa and Al-Mahra
A chronic pt may infect 15 pt every year
- In 1993, WHO considered TB internationally as the first disease

Definition:

TB is an infectious disease caused by bacteria called *mycobacterium*. It was discovered in the mummies of Egypt by Robert Koch, a German scientist.

TB is an air borne disease transmitted directly by sneezing, coughing etc. toward the other person or indirectly by sneezing or coughing on the floor and after it dries up, it is transmitted by air to the susceptible person.

It has 2 types:

1. **Pulmonary:** which is further divided into 2 subtypes
 - Pulmonary positive sputum: in which specimen of sputum from pt has the bacteria seen under the microscope
 - Pulmonary negative sputum: no bacteria is seen under microscope
2. **Extra pulmonary:** 20% of pt has extra pulmonary TB, found in any part of body except of lungs.

Symptoms of pulmonary TB:

1. Cough: continuous for more than 2 weeks unresponsive to antibiotics
N.B: some pts may have allergy and their cough may stay for 3 months
2. Night fever and sweating
3. Loss of appetite, pt become very thin but regain appetite and weight after responding to treatment
4. Dyspnea
5. Spitting blood at late stage

Symptoms of extra pulmonary TB:

1. Loss of function of the infected organ.
e.g. pt with TB in back bone
2. Loss of appetite

3. Night sweating and fever

If it was asymptomatic it is called latent TB

Prophylaxis:

- Advice the pt to use tissues when sneezing and never cough on floor
- Avoid the house being crowded
- Health education and having good relation with the pt

Risk factors:

1. Bad nutrition
2. Decreased immunity
3. Some diseases like AIDS(pt with AIDS may day cause of TB), DM, hepatitis
4. Some drugs like corticosteroids which decrease immunity
5. High amount of bacteria transmitted to person leading to getting disease faster
6. Malnutrition
7. Bad housing conditions

Diagnosis:

1. Pulmonary positive sputum (direct smear we use acid fast bacilli)
we give pt 3 sputum (not superficial saliva) pots and ask the pt to bring sputum, 1 specimen at first day at early morning before having breakfast and the second day one at early morning before having breakfast and other one after 2 hours of eating
2. Pulmonary negative sputum
x-ray shows cavity in apical area, symptoms, contact with ill pt, history of family
in children: wide mediastinum with lymph node enlargement, positive tuberculin or manto test, look for signs, symptoms and source of infection
N.B: false positive result could be due to immunization
3. Extra pulmonary
biopsy from infected organ, x-ray, tuberculin test, contact, history, CT scan, lymph node enlargement

Dyes used in microscopical examination:

1. Carbon foxin or acid fast bacilli: it is a red dye that enters into bacteria then bacteria hold onto the stain and keep it inside
2. Sulphuric acid: erase the red stain from all cells except that which is trapped inside bacilli
3. Methylene blue: gives blue background

Patients are classified into categories:

Category 1:

previously healthy, diagnosed as having TB and given a treatment for one month

Category 2:

Had TB before and was treated before, after 2 months or more came to the T center complaining of *relapse*

or

during treatment pt was having negative test results indicating response to treatment but become positive again after 5 months (*failure of treatment*)

or

intermittent pts, those who stopped taking treatment for more than one month

Treatment:

Latent TB treated by single antibiotic while active TB is best treated by combination of several antibiotics

Category 1:

6 months of treatment divided into two stages:

1. Intensive stage:

2 months=56 days

medicines are RHZE

R= rifampicine, make urine color red

H,Z= isoniazid, pyrizinamide respectively , causes renal impairment

E= ethambutol , causes optic nerve lesion

after these 2months we do test, if negative we go to the complementary stage, if positive we give him RHZE for one additional month

2. Complementary stage:

4 months=112 days

RH dose of 150/75 per Kg

at the 5th and 6th months we do test, if negative we go to the complementary stage, if positive we give him RHZE for one additional month

N.B: 4 tests are done = first one is primary to know if he is infected or not

second after 2 months of treatment

third after 5th month

forth after 6th month

Category 2:

1. Intensive stage:

3 months=84 days, 2 months we give RHZE/S, and one month RHZE

S= streptomycin, causes hearing disturbance

after 3 months we do test, if negative we go to the complementary stage, if positive we give him RHZE for one additional month

2. Complementary stage:

5 months=140 days

after 5 months we do test, if negative we go to the complementary stage, if positive we give him RHE for one additional month

Challenges that faces therapy system:

- AIDS
- Resistance cases

Drugs used for TB resistance:

1. Amikacin
2. Cycloserine
3. Ethionamide
4. Levofloxacin
5. Para-amino salicylic acid (Pas)

To detect TB resistance we do:

- Gene expert: detect rifampin resistance
- Culture: to detect resistance to drugs other than rifampin

N.B:

- Children:
 - 2 months of age: RH 60/30 respectively
 - 4 months of age: RHZ 60/30/150 respectively
- Children we don't give them E because they cannot recognize if there is any impairment in their eyes

Dot system components:

- Lab facilities for diagnosis of TB
- Continuous drug supply
- Supervision which need a qualified person
- Assessment and surveillance for the cases through registration
- Political commitment

Evaluation of the process:

1. International evaluation:
 - 70% interpreted cases
 - 50% out of 100,000 are diagnosed
2. Yemen is moderately epidemic country, last tuberculin survey was in 2007
3. 85% of diagnosed cases should be cured
 - if there was no follow up tests we cannot prove the curacy

Immunization

- ❖ Rota is given only after 1 and half months of life not before
- ❖ Polio injection is given in 3rd visit or with measles
- ❖ After a year BCG and Rota are not given even if the child did not take them
- ❖ After 2 years all vaccines are stopped
- ❖ In campaigns, they give polio or measles to all targeted children even if they previously took them
- ❖ Among vaccines, pentavalent vaccine is painful and causes fever
- ❖ Drug dose depends on the weight of child
- ❖ Drug is kept at 2-8° C
- ❖ Measles and polio injection has indication for expiry, it is valid for only 6 hours after opening
- ❖ BCG tube is enough for 20 children
- ❖ Measles and polio is enough for 10 children
- ❖ With measles we give vit. A & E
 - blue pills of vit A has 100,000 I.U for age of 9 months
 - red pills of vit A has 200,000 I.U for age of 1 year and half
- ❖ Measles can be given up to 15 years
- ❖ For women, doses of tetanus toxin separated by not less than a year and can be taken at any time
- ❖ In refrigerator, first shelf has (BCG, measles, polio), second shelf (pentavalent vaccine, tetanus vaccine, staphylococcus vaccine), third shelf ice blocks
- ❖ Tetanus vaccine :
 - First dose do not give protection nor immunity
 - Second dose, one month later, gives 80% protection and 3 years immunity
 - Third dose, 6 months later, gives 95% protection and 5 years immunity
 - Forth dose, one year later, gives 99% protection and 10 years immunity
 - Fifth dose, one year later, 99%-100% protection and lifetime immunity